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# Department of Agriculture

## Agricultural Marketing Service

## Livestock: Grades and Standards for Feeder Cattle

**DEPARTMENT OF AGRICULTURE**

**Agricultural Marketing Service**

**7 CFR Part 53**

**Livestock (Grades and Standards for Feeder Cattle)**

**AGENCY:** Agricultural Marketing Service.

**ACTION:** Final rule.

**SUMMARY:** This document revises the official United States standards for grades of feeder cattle. Changes in the kinds of cattle being produced in the United States since the present standards were adopted in 1964, linked with changes made in the slaughter cattle and beef carcass standards in 1976, make a revision necessary. This grading system for thrifty feeder cattle involves separate identifications for variations in frame size and muscle thickness. The frame size portion of the grade—the most important consideration—effectively identifies feeders for the weight at which they are expected to produce carcasses of a given grade—U.S. Choice, for example. The portion of the grade related to thickness identifies feeders for the effect that differences in muscle thickness will have on the ultimate USDA yield grade of their carcass.

On May 1, 1979, a notice of proposed rulemaking was published in the **Federal Register** (Vol. 44, No. 85, 25614), Part VI, regarding a revision of the grades and standards for feeder cattle (7 CFR Part 53.208–53.212).

A 61-day comment period was provided for interested persons to submit written data, views, or arguments concerning the proposal. During this period, Department Livestock Standardization technicians appeared at several industry meetings to explain the proposal.

The comments and other information available to the Department relative to the proposal have been carefully evaluated. Based on that evaluation, the Department has concluded that adoption of the standards as proposed is in the best interest of the livestock industry.

**EFFECTIVE DATE:** September 2, 1979.

**FOR FURTHER INFORMATION CONTACT:** W. Edmund Tyler, 202–447–5679.

**SUPPLEMENTARY INFORMATION:** The present U.S. standards for grades of feeder cattle were promulgated September 25, 1964. Since 1964, these official standards have been used by the Department as the basis for market reporting of feeder cattle prices and the basis for certifying the grade of feeder cattle delivered on futures contracts. They also are used by States which conduct official feeder cattle grading programs.

Recognizing the changes in size and body type that have occurred, in the cattle population, the Department appointed a special task force in 1973 to review the adequacy of the 1964 standards and to recommend any changes that might be needed. That task force was composed of USDA Livestock Division specialists and State department of agriculture specialists directly responsible for conducting livestock grading programs in their respective States.

The task force report concluded (1) that the present standards were not widely accepted as a tool for use in trading on feeder cattle, (2) that the feeder cattle type had changed dramatically since 1964, and (3) that new standards which better reflect the needs of the feeder cattle industry should be developed.

That task force also concluded that frame size and muscle thickness were two of the most important factors affecting merit (value) in feeder cattle that were not otherwise readily apparent—sex, weight, age, etc. The task force recommended that these two factors be used as the basis for revised standards and that a grading system be developed in which the grade of a feeder animal would include separate identifications for each of these factors. Separate identification for these two important variables was considered essential since frame size and muscle thickness are not necessarily related, and a single system combining these factors would result in individual grades containing cattle of varying frame sizes and muscle thicknesses.

The frame size and muscle thickness concept is valid because: (1) frame size is an inherent characteristic in cattle that is not affected by normal management practices. Frame size at a given age is highly correlated with an animal's mature size. Consequently, frame size is also highly correlated with the weight at which, under normal feeding and management practices, an animal will produce a carcass of a given grade. An evaluation of frame size is a useful tool for segregating animals into groups that are relatively homogeneous with respect to the weight at which they would have the same USDA quality grade. Therefore, to reflect differences in frame size, three frame size categories are used—Large Frame, Medium Frame, and Small Frame. In each of the frame size specifications, guidelines are given relative to the live weights at which steers and heifers would each be expected to produce U.S. Choice carcasses.

(2) Degree of muscle thickness is also an inherent characteristic which affects carcass yields of lean meat and differences in USDA carcass yield grades. Such differences can result in a thinly muscled animal having a Choice, Yield Grade 3 carcass, whereas the carcass of a thickly muscled animal may be a Choice, Yield Grade 2. Such a difference in yield grade is of considerable economic significance and thus is a valid reason for including a measure of muscle thickness as a factor in the standards for grades of feeder cattle. And, since variations in this factor are associated with differences in yield grade—not quality grade—the terms "No. 1," "No. 2," and "No. 3" have been selected to identify the three categories of thickness. A constant degree of fatness (slightly thin) is used in appraising the development of muscle thickness.

Thriftiness is an important value determining characteristic of feeder cattle because it relates to the animal's ability to grow and fatten normally. Cattle must be thrifty to be eligible for the frame size and muscle thickness grades. When unthrifty, they are graded inferior.

The Department considered the possible inclusion of fatness as a third grade factor for feeder cattle. However, this would greatly increase the number of grade combinations—from 9 to 27—which would likely render the application of the grades impractical. Using fatness in lieu of degree of muscle thickness was also considered, but this would result in cattle in a particular grade being so dissimilar in appearance that their marketability would be seriously impaired. For example, a pen of cattle of a given frame size and degree of fatness could range all the way from thick beef animals to animals of non-beef breeding which are narrow throughout. Adopting fatness as a grade factor would, at times, necessitate placing a different feeder grade on the same animal in different stages of its development. Also, cattle from the same herd may be graded differently from year to year depending on their plane of nutrition and management.

Variations in fatness have different effects on feeder cattle value, dependent on the relative price of slaughter cattle and cost of feedlot gain. Depending on the feeding regime to be followed, the age of the cattle, and the "feeding economics," cattle may bring either a premium or be discounted because they are fat or because they are thin.

Therefore, the Department believes that when degree of fatness is a significant factor affecting value, it should be used in market reports in addition to grade in order to be more descriptive of market conditions.

The Department has always recognized the need for a more factual basis for all of its livestock grade standards and has continually encouraged and supported research designed to identify and evaluate the factors that would accurately predict feeder cattle merit. Late in 1976, a draft proposal of feeder cattle standards was developed and submitted to interested persons for discussion purposes. The draft proposal was based on an evaluation of the research data available at the time from various research intitutions. Informal comments on the draft were solicited from university animal scientists, State departments of agriculture, livestock, breed, and farm organizations, and other industry interests. A vast majority commented favorably on the draft proposal. Almost concurrently, preliminary results from a feeder cattle study which raised questions concerning the use of muscling as a grade factor were presented at several meetings of cattle producers and feeders. Consequently, a proposal for new feeder grades was delayed until more research could be conducted, particularly with respect to muscling. In this effort, the Department cooperated with Texas A&M University, Colorado State University, and Monfort of Colorado in conducting a feeder cattle study (Monfort study) which began in September 1977 and was completed in March 1978. Nine hundred forty-four feeder steers were selected to represent broad variations in frame size and degree of muscling and they were fed to weights that correspoond to their frame size as defined in the 1976 proposed revision. Numerous subjective and objective evaluations were made on these cattle and their resultant carcasses. These data were then analyzed with respect to the effect of musling and frame size and the results indicated: (a) the larger the frame size the higher the rate of gain, the longer the period required to fatten, and the greater the live weight necessary to attain a given slaughter quality grade, (b) the greater the muscle thickness the higher the yield grade of the resulting carcasses, the greater the ribeye size, and the higher the muscle: bone ratio. In addition to the Monfort study, feeder and carcass data were collected on two hundred twenty-two steers in a cooperative study with the American Farm Bureau Federation. Results from these studies were comparable.

A total of 67 comments on the proposed standards for grades of feeder cattle were received during the comment period. Comments received included 14 from organizations with 5 of those from organizations of a national scope, 2 from beef cattle registry associations, 20 from State departments of agriculture, 24 from research and educational workers, and 7 from individuals and companies. The comments were overwhelmingly in favor of adopting the proposal. Several commentators, although they endorsed adoption, recommended slight adjustments or refinements. For the most part, these reiterated positions and recommendations which the Department had considered in developing the proposal. Recommended adjustments in the standards not included in the proposal fell generally into two categories:

A. Levels of muscle thickness.

B. Extra time for industry education before implementation.

With respect to muscle thickness, some suggested that the Department use the levels of muscling referenced in the 1976 draft proposal. In this draft proposal the Department intended for the levels of muscling referenced as No. 1, No. 2, and No. 3, to correspond with the muscling descriptions from Prime, Choice, and less than Choice grades described in the 1964 grade standards. This was changed prior to the May 1 proposal because some industry members were concerned that: (1) the muscling differences were not of sufficient magnitude to be used as a grade factor, (2) muscling differences in feeder cattle were not easily distinguished in young cattle, and (3) very thick muscling might cause production problems. These concerns by some industry members caused the Department to modify and deemphasize muscling requirements from that originally described in the 1976 draft.

A few commentators were concerned that the width of the No. 2 muscle thickness grade as proposed—this grade includes cattle formally in the Good and Standard grades—was too wide. Our research shows, that the variation in muscle thickness in cattle eligible for this grade does not justify reducing the width of the grade. Also, USDA Marketing Research Report No. 1073, "Grades of Fed Beef Carcasses", shows that the number of beef carcasses with U.S. Standard muscle thickness is only 0.4 percent. This compares with 25.1, 63.8, and 13.7 for the Prime, Choice, and Good Grades, respectively.

The Department is presently cooperating with the Colorado State Department of Agriculture and the Colorado State University in an extensive feeder cattle study designed to develop additional data with regard to muscling and its impact on beef production. The Department will analyze this data after completion of the study in 1983 to determine if the standards for grades of feeder cattle can be improved.

The Department does not believe that allowing extra time for industry education before implementing the standards is necessary. The Department bases this conclusion on the following: (1) these standards have been actively discussed by the industry since early 1977, (2) the proposal has been highly publicized in virtually all livestock trade magazines and publications, (3) a slide series and script explaining the proposal was distributed to most land-grant universities, State departments of agriculture, breed associations, and industry organizations, (4) for the most part, comments received by the Department during the commenting period indicated a thorough working knowledge of the proposal. Additionally, several States which conduct State graded feeder cattle sales have indicated they wish to use the revised standards this fall if they are implemented by September.

Accordingly, the official U.S. grades and standards for feeder cattle are revised, effective September 2, 1979, by changing §§ 53.208, 53.209, and adding 53.210–53.212 as follows:

**§ 53.208 Feeder Cattle Grades.**

(a) *Grade Factors.* (1) These standards apply only to cattle that have not reached the age of 36 months, except these grades may be used to describe stock cows for market reporting purposes.

(2) The grade of feeder cattle is determined by evaluating three general value-determining characteristics—frame size, thickness, and thriftiness.

(3) Frame size refers to the animal's skeletal size—its height and body length—in relation to its age. Thus, frame size evaluations are directly related to differences in mature size. At the same age, large frame cattle will be taller at the withers and the hips and longer bodied than small frame cattle.

(4) Thickness in feeder cattle refers to the development of the muscle system in relation to skeletal size. In feeder cattle of the same age and frame size variations in thickness are due to differences in bone structure, muscling, and degree of fatness. For purposes of

these standards, thickness is evaluated, assuming a constant degree of fatness—slightly thin. Thicker feeder cattle will have a higher ratio of muscle to bone when fed to the same degree of fatness and will have a higher yield grade.

(5) Thriftiness refers to the apparent health of an animal and to its ability to grow and fatten normally. In these standards unthrifty animals are those which are not expected to perform normally in their present state. This may be due to such factors as disease, parasitism, severe emaciation, or any condition that must be corrected before they could be expected to perform normally. Unthrifty feeder cattle may have any combination of thickness and frame size.

(b) *Grades.* (1) The grades of feeder cattle that have been determined to be thrifty include three separate groupings for different frame sizes—Large Frame, Medium Frame, and Small Frame and three separate groups for thickness—No. 1, No. 2, and No. 3. The nine resultant grades are as follows: Large Frame, No. 1; Large Frame, No. 2; Large Frame, No. 3; Medium Frame, No. 1; Medium Frame, No. 2; Medium Frame, No. 3; Small Frame, No. 1; Small Frame, No. 2; Small Frame, No. 3.

(2) The U.S. Inferior grade shall apply to all feeder cattle that have been determined to be unthrifty. Additionally, "double-muscled" (muscular hyperthrophy) cattle are graded Inferior because they cannot be expected to deposit intramuscular fat (marbling) normally.

**§ 53.209 Application of Standards for Grades of Feeder Cattle.**

(a) *General Principles.* (1) For the grades of feeder cattle, separate evaluations are made for thriftiness, frame size, and thickness. Each of these factors are very important to feeder cattle buyers and individually affect how cattle will perform in the feedlot. Additionally, variations in frame size and thickness have separate effects on the ultimate carcasses that are produced.

(2) Variations in frame size among feeder cattle primarily affect the composition of their gain in weight. The gain in weight of a large framed feeder animal of a given degree of thickness normally will consist of more muscle and bone—but less fat—than a smaller framed animal. Indirectly, therefore, at a given weight and thickness, large framed animals will have a lesser degree of fatness than smaller framed animals and will also have carcasses with higher yield grades—but lower quality grades. This means that if animals are fed to produce the same quality grades—Choice, for example—large framed cattle of a given thickness must be fed to heavier weights than cattle of the same thickness but which are smaller framed. In each of the frame size specifications, guidelines are given relative to the live weights at which steers and heifers may each be expected to produce carcasses with the degree of finish normally associated with the Choice grade (approximately 0.50 inch).

(3) Variations in thickness are reflected in differences in ribeye area and, therefore, relate primarily to the ultimate yield grade of the carcass that a feeder animal will produce. When marketed at a given weight, a thick animal of a given frame size will normally produce a higher yield grading carcass than an animal of the same frame size that is narrow throughout. This results from the fact that the thick animal, at a given weight, will have both a larger ribeye and a lesser degree of fatness. If cattle are fed to produce carcasses of the same quality grade—Choice, for example—thick feeders of a given frame size must normally be fed to slightly heavier weights than cattle of the same frame size which are not as thick.

(4) The frame size portion of the grade is determined by an evaluation of an animal's skeletal size in relation to its age. Since age is such an important factor in determining frame size, careful consideration must be given to its evaluation. For example, two feeder cattle from the same environment with the same height and body length but which differed substantially in age would obviously not be the same frame size. By the same token, at a given age, a taller, longer bodied feeder animal will be larger framed than a short bodied animal that is not as tall. As feeder cattle mature, their heads appear to increase in relation to the size of their body; their ears decrease in size in relation to the size of their heads; the muzzle becomes proportionately wider; the head becomes longer in relation to its width; the feet become larger in relation to the size of the bone; and the tail increases in length and exhibits a more prominent switch. In evaluating feeder cattle for frame size, it must be remembered that breeds differ in the general range of their frame size and that since these standards apply to all breeds, this variation in frame among breeds must be taken in account. For example, in these standards, the largest framed cattle in a breed of small mature size—and the smallest framed cattle in a breed of large mature size—might both be considered as Medium in frame size.

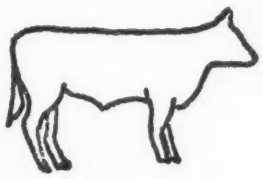
(5) The thickness portion of the grade is determined by appraising the development of the muscular system in relation to the development of the skeletal system. Two of the three thickness grades include detailed descriptions of the thickness and fullness of the feeder cattle in the various parts due to differences in bone structure and muscling. However, since the appearance of these parts may be influenced to a considerable extent by variations in fatness, the descriptions are based on animals that have a slightly thin covering of fat. When evaluating the thickness of animals which have either a greater or lesser degree of fatness than that on which the standards are based, proper allowances must be made for the effect of these differences on the appearance of the various parts. In making such allowances, it must be remembered that cattle deposit fat at a relatively faster rate over the loin and back and in the flank, cod or udder, twist, and brisket than they do through the rear quarter, forearm, and gaskin. Therefore, as cattle increase in fatness, these former parts appear progressively fuller, thicker, and more distended in relation to the thickness through the rear quarter and to the fullness of the forearm and gaskin. Since relatively little fat is deposited over these latter parts, their appearance is affected relatively little by variations in fatness. In evaluating the thickness of feeder cattle, it is important to properly evaluate the thickness in all parts of the animal. However, since variations in fatness make it especially difficult to precisely evaluate the thickness and fullness of muscling in the loin and back, major emphasis should be placed on the development of muscling in the rear quarter, forearm, and gaskin as an indicator of overall thickness. Unless proper allowance is made for variations in fatness, animals carrying considerable finish may appear to have greater thickness throughout than actually is the case, whereas those which are in very thin condition may be inherently thicker than their appearance might indicate.

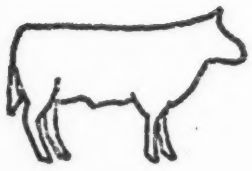
**§ 53.210 Specifications for Official United States Standards for Grades of Thrifty Feeder Cattle (Frame Size).**

(a) *Large Frame (L).* Feeder cattle which possess typical minimum qualifications for this grade are thrifty, have large frames, and are tall and long bodied for their age. Steers and heifers would not be expected to produce U.S. Choice carcasses (about 0.50 inch fat at twelth rib) until their live weights

exceed 1200 pounds and 1000 pounds, respectively.

(b) *Medium Frame (M).* Feeder cattle which possess typical minimum qualifications for this grade are thrifty, have slightly large frames, and are slightly tall and slightly long bodied for their age. Steers and heifers would be expected to produce U.S. Choice carcasses (about 0.50 inch fat at twelth rib) at live weights of 1000 to 1200 pounds and 850 to 1000 pounds, respectively.





(c) Small Frame (S). Feeder cattle included in this grade are thrifty, have small frames, and are shorter bodied and not as tall as specified as the minimum for the Medium Frame grade. Steers and heifers would be expected to produce U.S. Choice carcasses (about 0.50 inch fat at twelfth rib) at live weights of less than 1,000 pounds and 850 pounds, respectively.

**§ 53.211 Specifications for official U.S. standards for grades of thrifty feeder cattle (thickness).**

(a) *No. 1.* Feeder cattle which possess minimum qualifications for this grade usually show a high proportion of beef breeding. They must be thrifty and slightly thick throughout. They are slightly thick and full in the forearm and gaskin, showing a rounded appearance through the back and loin with moderate width between the legs, both front and rear. Cattle show this thickness with a slightly thin covering of fat; however, cattle eligible for this grade may carry varying degrees of fat.

(b) *No. 2.* Feeder cattle which possess minimum qualifications for this grade are thrifty and are narrow through the forequarter and the middle part of the rounds. The forearm and gaskin are thin and the back and loin have a sunken appearance. The legs are set close together, both front and rear. Cattle show this narrowness with a slightly thin covering of fat; however, cattle eligible for this grade may carry varying degrees of fat.

(c) *No. 3.* Feeder cattle included in this grade are thrifty animals which have less thickness than the minimum requirements specified for the No. 2 grade.

**§ 53.212 Specifications for official U.S. standards for the grade of unthrifty feeder cattle.**

(a) *Inferior.* This grade includes those feeder cattle which are not expected to perform normally in their present state and those that are "double-muscled." Cattle in this grade may have any combination of thickness and frame size.

Dated: July 27, 1979.

**William T. Manley,**

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